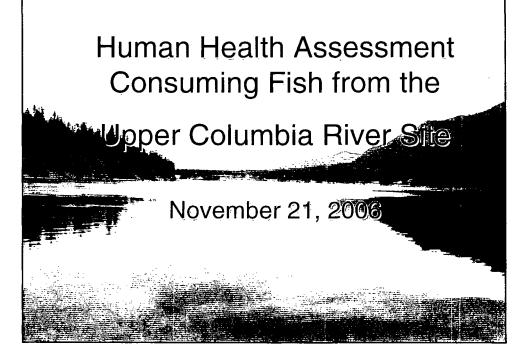
Handed out@ 11/21/06 mtg W/ccT

UCRSF 10.11.1.3



Questions:

Do pollutants in the Upper Columbia River threaten people?

Are people at increased risk?

Does pollution cause people to avoid the River or its resources? – concern for future exposures

The questions must inform EPA's CERCLA decision.



Why Risk Assessment?

- •Determine whether actions are needed to protect people
- Gather information for cleanup decisions and subsequent design work
- oldentify specific chemicals, exposure pathways, and scenarios which warrant "remedial action"

Exposure Scenarios

- •Recreation by residents
- •Recreational by visitors
- Workers
 - Construction & maintenance
 - Biologist & cultural resources
- oTribal Subsistence

Potential Sampling Media

- More Beach Sediment
- •More Fish or Shellfish
- Game
- •Riparian or Aquatic Plants
- Dust in air
- •Groundwater/Surface Water

Exposure → Average Daily Intake

ADI = average daily intake (mg/kg/day) EC_i = concentration in environmental medium i (mg/kg) $IR_i = intake rate of medium i (kg/day)$ $ED_i = exposure duration to medium i (day)$ AT = averaging time (day)

BW = body weight (kg)

*intake associated with unacceptable risk

Reasonable Maximum Exposure

- •Based on a high level of exposure to ensure an adequate, but reasonable level of protection
- •Distinguishes between scenarios that are possible, but highly improbable, and those that are more likely to occur within a population, with the latter being favored in risk assessment
- •Not an upper-bound estimate (i.e., an upper limit on what is possible) because it must occur within the realm of reasonable likelihood (e.g., ~95th percentile; not MAX)
- Entails judgment and uncertainty

Exposure Pathways

- Are all pathways and receptors represented?
- Which are likely to be the most significant pathways?
- What data are needed to evaluate each pathway?
 - Resource use and consumption survey
 - Contaminant levels in pathway media

				Expesed Populations														
Potentially Impacted Media		Exposure Route		Residential ⁷ Children Adults		Residential Recreation Adults	Residential Recreation Children	Non local Recreation Adults	Non local Recreation Children	Occupational	Subsistence* Adults	Subsistence* Children	CCT Resident Adults	CCT Resident Children	Spokane Tribe Resident Adults	Spukane Tribe Resident Children	Seasonal Re Children	sidential*** Adults
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